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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,753	03/05/2002	Yukihiko Yamashita	TOYAM83.001 APC	7668

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EXAMINER

LEE, RIP A

ART UNIT PAPER NUMBER

1713

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,753

Applicant(s)

YAMASHITA ET AL.

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,13,15,16,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 1, 3, 7-18 and 21-30 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1, 7, and 13 are objected to because of the following informalities: The base polymer is made from monomers having general formula (I), but they do not comprise said compounds. Appropriate correction of claim language is required.
2. Claims 1 is objected to because of the following informalities: Polymer (B) is said to “comprise” polystyrene or a polystyrene derivative. If (B) is made of another polymer other than polystyrene, *i.e.*, it is a blend of polymers, as the claim language implies, then the true constitution of (B) is not made clear.
3. Claim 1 objected to because of the following informalities: The claim recites components (A) and (B) and/or (C). Although the term “and/or” is acceptable, in this case, some ambiguity exists due to different interpretations of the claim: (i) the composition contains (A) and (B) and (C), (ii) the composition contains (A) and (B), or it contains (C), (iii) the composition contains (A) and (B) or it contains (A) and (C). Embodiment (iii) is inferred from the claim language, but it not stated lucidly with the current diction. Appropriate correction is required.
4. Claim 1 is objected to because of the following informalities: Use of the term “and” after “styrene derivative” in line 4 of the claim is inconsistent with the “or” terminology in line 1. Appropriate correction is required.

5. Claim 1 is objected to because of the following informalities: Since zero is an integer, the claim may be revised to state "x is an integer of 0-4," or "x is 0-4," or something to the effect thereof. Appropriate correction is required.
6. Claims 7 and 13 are objected to because of the following informalities: The indene compound of formula (I) should be incorporated into the text of the claims because they are independent claims. Appropriate correction is required.
7. Claim 7 is objected to because of the following informalities: It is not certain whether the claim recites use of two polymers derived from indene or whether graft polymer (H) includes polymer (F) in grafted from. Clarification is requested.
8. Claim 22 is objected to because of the following informalities: Delete "the sheet or the film" since claim 19 is not drawn to such items. Correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1, 7, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "monomer copolymerizable with styrene or a styrene derivative" renders the claims vague and indefinite because the nature of the monomer is unknown, and as such, the claims attempt to encompass all ethylenically unsaturated monomers. Furthermore, it is not clear whether the polymer contains styrene or styrene derivatives; in fact, it is not clear why the recitation needs to be incorporated into the claim at all.

11. Claims 13, 15, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites the term "heterocyclic structure." As there are hundreds, if not thousands, of embodiments that qualify as "heterocyclic structure," without qualification, the claims remain vague and indefinite.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 4, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-246733.

The prior art discloses a composition comprising an isobutylene-based block copolymer and a thermoplastic resin. The block copolymer contains a vinyl aromatic block prepared from indene derivatives (abstract). The ratio of block copolymer to thermoplastic resin is 99:1-1:99 (claim 6). The number average molecular weight of the block copolymer lies in the range of 30,000-500,000 (claim 10). The thermoplastic resin is variegated and includes polystyrene (claim 16).

14. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,432,607 to Levy.

Levy discloses a composition comprising naphthenic or paraffinic oil, SBS block copolymer, a coumarone-indene copolymer, and a thermal oxidative stabilizer (claim 1). The stabilizer is Irganox 1010, a hindered phenolic antioxidant (see Table II).

15. Claims 1, 6, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,066,717 to Li *et al.*

Li *et al.* teaches a composition comprising 100 pw of polystyrene and 1-50 pw of polyindene (claim 1). Test specimens (1/8" test bars) were molded from the blend (col. 2, line 19). With respect to claim 19, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See MPEP § 2111.02. There is no indication that the composition of the prior art can not be made into the claimed articles of manufacture. As such, the composition still meets the claims.

16. Claims 1, 4-6, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-231403.

The patent teaches a composition comprising 10 pw of an aromatic resin having a molecular weight of 100,000-600,000 and 0.1-30 pw of the hydrogenation product of a petroleum resin obtained by polymerizing the fraction containing vinyltoluene and indene. The latter component has a molecular weight that lies in the range of 500-10,000 (abstract). Molded parts are made from the inventive composition (paragraphs [0043] and [0044]). With respect to claim 19, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,267,086 to Pett *et al.*

Pett *et al.* teaches a composition comprising polystyrene, polyindene resin, and a quinoline antioxidant (Example 17). The reference does not show an example in which the same composition contains a phenolic antioxidant. However, such an embodiment would have been obvious to the skilled artisan because Pett *et al.* teaches use of hindered phenolic antioxidants (col. 6, lines 54-57, Example 15). Thus, one having skill in the art would find it obvious to use a hindered phenol as the antioxidant in Example 17, and one would have expected it to work. The combination is obvious because the prior art teaches and fairly suggests such a combination.

Allowable Subject Matter

20. Independent claims 7 and 13 would be allowable if rewritten to overcome claim objections and claim rejections under 35 U.S.C. 112, second paragraph, set forth in this office action.

21. Claims 3, 8-12, 14, 17, 18, 21, 23-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. Claims 15, 16, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and when rewritten to overcome claim objections and claim rejections under 35 U.S.C. 112, second paragraph.

23. The following is a statement of reasons for the indication of allowable subject matter: None of the cited references teaches a composition containing indene-based polymer, polystyrene, and graft copolymer derived from indene, as recited in claim 7. Also, none of the references teaches the composition recited in claim 13.

Priority

24. The prior art made of record but not relied upon is considered pertinent to the Applicant's disclosure. The following references relate to compositions comprised of a polymer containing indene units and those with polymer containing styrene units.

U.S. Patent No. 5,229,449 to Enamoto *et al.*

U.S. Patent No. 5,124,240 to Brosius *et al.*

U.S. Patent No. 4,326,045 to Li *et al.*

U.S. Patent No. 4,082,820 to Li *et al.*

JP 2002-3706

JP 4-323,246

The following references relate to graft copolymers made by grafting indene-based polymer onto a chlorobutyl rubber backbone.

U.S. Patent No. 4,105,713 to Sigwalt *et al.*

U.S. Patent No. 4,100,226 to Li *et al.*